Docket No.: 50002/40454
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Nebot, et al.

Confirmation No.: 8922

Application No.: 10/573,104

Art Unit: 2617

Filed: March 23, 2006

Examiner: Charles T. Shedrick

For: Virtual Network System

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the Notice of Appeal filed on August 18, 2009, in connection with the above-identified patent application, Appellant respectfully submits this Appeal Brief in accordance with 37 C.F.R. §41.37. This Brief is timely filed within two months from the receiving date of the Notice of Appeal by the Office.

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This Appeal Brief contains the following items in the order set forth below (37 C.F.R. §41.37(c)):

I. REAL PARTY IN INTEREST

The real party in interest in the application on appeal is CMTE Development Limited, the assignee of the present application. An assignment assigning rights in the present application to CMTE Development Limited was recorded in the United States Patent and Trademark Office at Reel 017700, Frame No. 0584.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellant, Appellant's legal representative, or Assignee, which will directly affect or be directly affected by, or have bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Currently, claims 13-22 are pending. Claims 13-22 stand rejected as being anticipated by or obvious in view of the cited prior art. The aforementioned rejections asserted against claims 13-22 are hereby appealed. The currently pending claims are reproduced in the Claims Appendix to this Brief.

IV. STATUS OF AMENDMENTS

No amendment to pending claims 13-22 was submitted after the Final Office action dated February 18, 2009 because, contrary to the Examiner's assertions, each of the pending claims is neither anticipated by nor rendered obvious in view of the prior art cited by the Examiner.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter is related to an improved virtual computer wireless network which easily adapts to changing environments and overcomes deficiencies associated with wireless networks commonly known in the art. See paragraphs [0002] - [0003] of the specification of the present application (Publication No. 2008/0008938).

Among the wireless computer networks currently available, the only dynamic computer network suitable for constantly changing environments is a temporary ad-hoc network. An ad-hoc network configuration typically includes a plurality of computers that are virtually interconnected within the range of the particular ad-hoc network. However, in order to communicate with another ad-hoc network, or any other network outside the range of the ad-hoc network, each ad-hoc network requires at least one fixed station with a hard wired backbone. While these fixed stations may provide communication between ad-hoc networks spread over substantial distances, the static nature of the hard wired stations presents several limitations when used in dynamic or constantly changing environments. For instance, the relationships between individual networks in a mining environment are spread over substantial distances and constantly changing due to the ongoing development of the mining operation. It is simply impractical and inconvenient to provide a hard wired fixed station for each and every dynamic ad-hoc network, as disclosed in paragraphs [0002] - [0003] of the present application.

The present application overcomes these deficiencies by providing a virtual wireless computer network that allows communication between several networks spread over substantial distances and easily adapts to the constantly changing nature of dynamic environments, such as mining environments. Moreover, the present application provides, among other things, a plurality of stations having at least one mobile station capable of

traveling between different regions or networks by way of a common path, road, or the like. While traveling between the different regions or networks, the mobile station is able to relay information between two or more stations situated in regions that may otherwise be out of communication range. In such a way, individual regions do not require hard wired or fixed stations to communicate over substantial distances of the virtual wireless computer network, and further, are easily adaptable to any changes in the relationships between regions. Support for the same is found throughout the specification, and more particularly, in paragraphs [0023] - [0025] of the present application corresponding to Figs. 2 and 3 of the drawings.

Accordingly, independent claim 13 of the present application specifies a virtual wireless computer network which includes a plurality of stations that are arranged to interface with one another by wireless communication in two or more regions, or networks, and within each region, wherein at least one of the regions is beyond normal wireless communication range of the other regions. At least one of the stations is a mobile station that is capable of traveling between the regions. As specified in the pending claims, the mobile station is adapted to receive and/or transmit information by wireless communication in one region when in that region, and receive and/or transmit information to other regions when in those regions. Support for the same is found, for instance, in paragraphs [0023] - [0025] of the present application and Figs. 2 and 3 of the drawings.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The two issues presented on this appeal are:

(1) Whether claims 13-18 and 21 are unpatentable under 35 U.S.C. §102(b) as being anticipated by International Publication No. WO 02/025968 ("Troemel"); and

(2) Whether claims 19, 20 and 22 are unpatentable under 35 U.S.C. §103(a) as being obvious over the combination of Troemel and U.S. Patent No. 5,375,059 ("Kyrtsos").

VII. ARGUMENT

Contrary to the Examiner's assertions, independent claim 13, as well as claims 14-18 and 21 dependent thereon, is not anticipated by Troemel under 35 U.S.C. §102(b) because each of the pending claims includes one or more elements that are not disclosed by Troemel. Furthermore, claims 19, 20 and 22 are not obvious over the prior art references cited by the Examiner because a *prima facie* case of obviousness under 35 U.S.C. §103(a) cannot be established by the combination of Troemel and Kyrtsos as suggested by the Examiner. Accordingly, all rejections asserted against the currently pending claims 13-22 are erroneous and must be reversed.

I. Troemel fails to disclose each and every element of the pending claims, and thus, the pending claims are not anticipated by Troemel.

In the Final Office action dated February 18, 2009, the Examiner rejected claims 13-18 and 21 as being anticipated by Troemel. According to MPEP §2131, "[a] claim is anticipated only if each and every element set forth in the claim is found, either expressly or inherently described, in a single prior art reference." To make a proper anticipation rejection, the Examiner must establish that Troemel teaches each and every element of the rejected claims.

Here, claims 13-18 and 21 are not anticipated by Troemel because Troemel does not disclose each and every element of the rejected claims. As discussed in paragraphs [0002] - [0003] of the present application, ad-hoc networks require a fixed station with a hard wired backbone, such as the base station of Troemel, in order to communicate with another ad-hoc network, or any other network outside the range of the ad-hoc network. Such hard wired or fixed stations present several limitations when applied to dynamic environments, such as mining environments, due to the constantly changing relationships between the individual

networks. The deficiencies associated with the static nature of Troemel's base stations are no different from what the present application aims to overcome. Moreover, the present application eliminates the need for fixed stations, which is required by Troemel, by providing at least one mobile station capable of moving between the regions or networks, and further, capable of relaying information between two or more stations situated in regions that may otherwise be out of communication range.

As the Board will note, each of the rejected claims requires at least a plurality of stations arranged to interface with each other by wireless communication in two or more regions and within each region, wherein at least one region is beyond normal wireless communication range of the other regions, and wherein at least one station is a mobile station able to travel between the regions. Each claim further requires the mobile station to receive and/or transmit information by wireless communication in one region when in that region, and receive and/or transmit information to other regions when in those regions. Contrary to the Examiner's assertions, nothing in Troemel meets all of these requirements.

As shown in the exemplary virtual network of Fig. 3 of the present application provided below, independent claim 13 specifies a plurality of stations (5, 6, 7, 8) arranged to interface with one another by wireless communication.

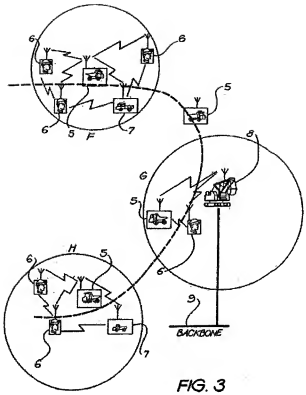

FIG. 3

More specifically, the stations (5, 6, 7, 8) are capable of communicating with one another in two or more regions (F, G, H) and within each region (F, G, H). At least one of the regions (F, G, H) of the virtual network is required to be beyond normal wireless communication range of the other regions (F, G, H). Claim 13 also requires at least one of the stations (5, 6, 7, 8) to be a mobile station (5) capable of traveling between regions (F, G, H). Furthermore, the mobile station (5) is adapted to receive and/or transmit information in one region (F, G, H) when in that region (F, G, H) and receive and/or transmit information to other regions (F, G, H) when in those regions (F, G, H). In particular, the claimed mobile station (5) can communicate information with stations (5, 6, 7, 8) that are located within a particular region (F, G, H), and with stations (5, 6, 7, 8) that are located in other regions (F, G, H). For instance, paragraph [0025] of the present application refers to the mobile station or truck (5) of Fig. 3 to teach that "[t]he truck in G can also collect information with mine management

directives from the backbone 9 to be delivered to other agents in area H." Troemel lacks such elements.

The abstract of Troemel, with reference to Fig. 5 provided below, teaches "a wireless Internet system for the mobile environment by utilizing small coverage area mobile transceivers (500, 502, 504, 506) to pass data along a 'virtual data pipe' to low power base stations (200) with ou[t]side network connections."

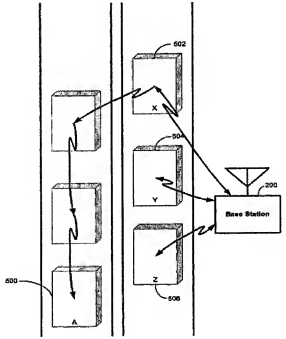

Fig. 5

The Examiner asserts that the mobile transceivers (500, 502, 504, 506) or mobiles of Troemel allegedly equate to the claimed one or more mobile stations. More specifically, on page 5 of the Final Office action, the Examiner relies upon the abstract and the passages between page 4, line 16 – page 5, line 7 of Troemel to incorrectly assert that the mobiles of Troemel are capable of communicating within networks as well as *between* networks. The same passages of Troemel relied upon by the Examiner clearly disclose that "in order to pass data from mobile to mobile ... a dynamically programmed airborne path to a low power base station" is

formed "to access the Internet or another outside network ... For incoming data, the base station of Troemel will 'drop off' data received from an outside network to the first mobile that passes by." Page 4, lines 25-27 of Troemel additionally teach that "[t]he low power base stations act as 'data depots' for the data to be transferred to the Internet or other outside network." Therefore, according to Troemel, in order communicate information from one mobile in one region or network to another mobile in another region or outside network, information *must*: (i) first pass from the mobile to a base station local to the mobile, (ii) then pass from the local base station to the base station of the outside network, and (iii) finally pass from the base station of the outside network to the destination mobile. The Examiner fails to address at least how the mobiles of Troemel communicate in two or more regions, and further, how the mobiles receive and/or transmit information *to other regions* when in those regions.

Furthermore, with reference to Fig. 2 provided below, page 12, lines 13-24 of Troemel teaches that "a user in vehicle A 202 wanting to send a data request to a destination within the Internet (or other outside data network) will use vehicle A's 202 mobile transceiver to locate other 'nodes', defined as mobile transceivers 110 or base stations 200, *within* the coverage area ... Mobile transceivers 110 will be able to *temporarily hold* data requests until other nodes useful for forming a virtual data path are within range."

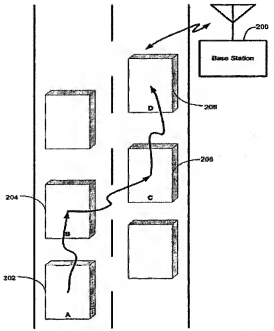

Fig. 2

Therefore, at least due to its limited storage and communication capabilities, a particular mobile of Troemel cannot, by itself, receive information from a base station of one local network, travel to an outside network with the information, and transmit the information to a base station of the outside network, as in the present application. More specifically, nothing in Troemel teaches a plurality of stations arranged to interface with each other in two or more regions, wherein at least one of the stations is a mobile station adapted to receive and/or transmit information to other regions when in those regions, as required by the pending claims.

As Troemel fails to disclose a plurality of stations arranged to interface with each other by wireless communication in two or more regions and within each region, wherein at least one of the regions is beyond normal wireless communication range of the other regions, and at least one mobile station able to travel between regions, adapted to receive and/or transmit information by wireless communication in one region when in that region, and

further, adapted to receive and/or transmit information to other regions when in those regions, Troemel cannot anticipate independent claim 13, as well as claims 14-22 dependent thereon. Accordingly, Appellant submits that the anticipation rejection of claims 13-18 and 21 based upon Troemel is erroneous and must be reversed.

II. The combination of Troemel and Kyrtsos suggested by the Examiner fails to teach or suggest each and every element of the rejected claims, and thus, Troemel and Kyrtsos fail to render the rejected claims obvious.

In the Final Office action, the Examiner also rejected claims 19, 20 and 22 as being obvious over the combination of Troemel and Kyrtsos. However, to support an obviousness rejection, MPEP §2143.03 requires "all words of a claim to be considered" and MPEP §2141.02 requires consideration of the "[claimed] invention and prior art as a whole." Further, the Board of Patent Appeal and Interferences recently confirmed that a proper, post-*KSR* obviousness determination still requires the Office make "a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art." *See, In re Wada and Murphy*, Appeal 2007-3733, citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). *See also*, *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (to establish a *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). In sum, it remains well-settled law that an obviousness rejection requires at least a suggestion of *all* of the claim elements.

Here, claims 19, 20 and 22 are not obvious over the prior art references cited by the Examiner because the combination of Troemel and Kyrtsos fails to teach or suggest each and every element of the rejected claims. As previously discussed with respect to independent claim 13, each of the pending claims requires at least a plurality of stations arranged to interface with each other by wireless communication in two or more regions and within each

region, at least one of the regions being beyond normal wireless communication range of the other regions, and at least one of the stations being a mobile station able to travel between regions, receive and/or transmit information by wireless communication in one region when in that region, and receive and/or transmit information to other regions when in those regions. These requirements cannot be met by the purported combination of the Troemel and Kyrtsos, as discussed more specifically below.

On pages 7 and 8 of the Final Office action, the Examiner asserts that Troemel teaches all of the limitations of the pending claims except for: (i) a virtual wireless computer network that takes into account the velocities of the stations and warns an operator appropriate to the danger detected, as specified in claim 19, (ii) a virtual wireless computer network that takes into consideration both the velocity of an oversize off-road haul truck as well as the position and velocity of any potential intruders in the vicinity of the haul truck, as specified in claim 20, and (iii) a virtual wireless computer network that is used in a mining environment, as specified in claim 22. The Examiner thus relies upon Kyrtsos to supply Troemel with the respective limitations of claims 19, 20 and 22. However, as previously discussed, Troemel fails to teach or suggest all of the limitations of independent claim 13, upon which claims 19, 20 and 22 directly or indirectly depend. More specifically, in addition to the limitations of claims 19, 20 and 22, Troemel has been shown to lack a plurality of stations arranged to interface with each other by wireless communication in two or more regions and within each region, wherein at least one of the regions is beyond normal wireless communication range of the other regions, and at least one mobile station able to travel between regions, adapted to receive and/or transmit information by wireless communication in one region when in that region, and further, adapted to receive and/or transmit information to other regions when in those regions.

Kyrtsos similarly fails. Kyrtsos is directed toward systems and methods for determining the position of a vehicle, and is unrelated to the virtual wireless computer networks of the present application. More specifically, as taught in column 16, line 42 – column 17, line 39 with reference to Fig. 1 of Kyrtsos provided below, Kyrtsos teaches obtaining a first position estimate of a vehicle (102) using a global positioning system, or GPS (700), obtaining a second position estimate of the vehicle (102) from a reference unit, or MPS (900), and deriving a third and final position estimate of the vehicle (102) based upon the first and second estimates using a vehicle processing system, or VPS (1000).

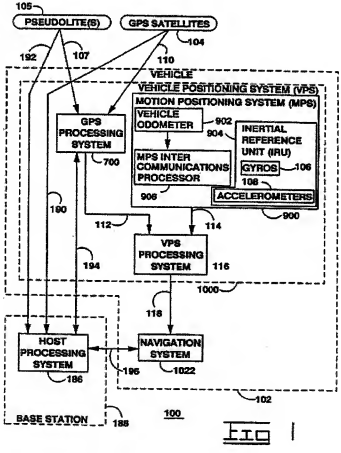

Fig. 1

As can be seen by the Board, Kyrtsos fails to supply all of the aforenoted deficiencies of Troemel. Moreover, nothing in Kyrtsos teaches or suggests a plurality of stations arranged to interface with each other by wireless communication in two or more regions and within

each region, wherein at least one of the regions is beyond normal wireless communication range of the other regions, and at least one mobile station able to travel between regions, adapted to receive and/or transmit information by wireless communication in one region when in that region, and further, adapted to receive and/or transmit information to other regions when in those regions, as required by each of the pending claims.

Because the combination of Troemel and Kyrtsos fails to teach or suggest all of the limitations of the base claim 13, upon which claims 19, 20 and 22 depend, the obviousness rejection of claims 19, 20 and 22 based upon Troemel and Kyrtsos is erroneous and must be reversed.

III. Troemel and Kyrtsos teach away from the claimed subject matter, and thus, provide further evidence of non-obviousness.

In addition to the above, the obviousness rejection based upon the purported combination of Troemel and Kyrtsos is improper because the subject matter of each reference teaches away from the present application. 'A prima facie case of obviousness can be rebutted if the applicant ... can show "that the art in any material respect taught away" from the claimed invention.' *In re Geisler*, 116 F.3d 1465, 1469, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997) (quoting *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974)). 'A reference may be said to teach away when a person of ordinary skill, upon reading the reference, ... would be led in a direction divergent from the path that was taken by the applicant.' *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360, 52 USPQ2d 1294, 1298 (Fed. Cir. 1999)."). A person of ordinary skill reading each of the disclosures of Troemel and Kyrtsos would be led in a path that is divergent from the improved virtual wireless computer network of the present application, as discussed more specifically below.

Among other things, the present application aims to overcome deficiencies that are found in the prior art as well as in Troemel. As previously discussed, in order for one region or network of Troemel to communicate with another region or outside network, Troemel requires at least one communication means, such as the Internet, capable of coverage that is at least as large as the distance between the respective base stations of the two networks. Paragraphs [0002] - [0003] of the present application specifically teaches this as a notable drawback in constantly changing environments, such as mining environments, where relative locations of individual regions or networks are often separated by significant distances and constantly moving. The present application overcomes such deficiencies by eliminating the need for constantly active and significantly large coverage areas interconnecting regions or networks. For example, paragraph [0025] of the present application teaches that "a very efficient virtual network can be built that connects all the operational areas of the mine without having to have full wireless coverage of all the mine area. This is efficient since the mine will always concentrate the resources in particular areas and these resources will be the ones that move with the network. The area without add-hoc networks will not require attention (coverage) and will be traversed by the normal fast moving agents, such as trucks 5." Troemel's need for static base stations and the extensive coverage areas required to interconnect such static base stations clearly teaches away from the more dynamic and adaptive path of the present application.

Kyrtsos is directed toward global positioning systems (GPS) and is simply unrelated to the virtual wireless computer networks of the present application or the mobile Internet system of Troemel. In fact, the present application aims to overcome the deficiencies associated with such GPS based systems. For instance, paragraph [0034] of the present application teaches that a solution based on GPS systems, which requires all mobile

equipment and personnel to possess a GPS unit that communicates with a base station, is expensive, not failsafe since it relies on each object having an operational GPS unit, and cannot always provide complete GPS coverage to all areas of a mine, such as mine pits. As discussed above, the Examiner cites Kyrtsos merely for its teachings of vehicle positioning techniques and its applications to mining environments. However, a person of ordinary skill reading Kyrtsos would surely be led in a direction divergent from the non-GPS based path of the present application.

As each of Troemel and Kyrtsos teaches away from the subject matter of the present application, Troemel and Kyrtsos fail to properly combine, and further, fail to render any of the pending claims as obvious. At least for these reasons alone, the obviousness rejection of claims 19, 20 and 22 based upon the combination of Troemel and Kyrtsos is improper and must be reversed.

In light of the foregoing, Appellant respectfully submits that all of the appealed rejections are erroneous and must be reversed by the Board of Appeals because the rejected claims include at least one element that is not disclosed by Troemel, and because a *prima facie* case of obviousness cannot be established by the combination of Troemel and Kyrtsos proposed by the Examiner.

Dated: September 17, 2009

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1-12. (Canceled).

13. (Previously Presented) A virtual wireless computer network including a plurality of stations arranged to interface with each other by wireless communication in two or more regions and within each region, at least one of said regions being beyond normal wireless communication range of other said regions, and wherein at least one station is a mobile station able to travel between regions, said mobile station being adapted to receive and/or transmit information by wireless communication in one region when in that region, and receive and/or transmit information to other regions when in those regions.

14. (Previously Presented) A virtual wireless computer network as claimed in claim 13, wherein one or more of the mobile stations is located in a vehicle.

15. (Previously Presented) A virtual wireless computer network as claimed in claim 13, wherein one or more of the mobile stations is located on a person able to travel between regions.

16. (Previously Presented) A virtual wireless computer network as claimed in claim 13, wherein at least one of the stations is hard wire connected to a backbone system.

17. (Previously Presented) A virtual wireless computer network as claimed in claim 13, wherein the stations include slow moving stations primarily adapted to be operating within regions, and fast moving stations primarily intended to be moving between regions.

18. (Previously Presented) A virtual wireless computer network as claimed in claim 13, wherein the network is also adapted to be used as a safety alert system providing advice to the operator of a station of the presence of other stations that may be in the immediate proximity.

19. (Previously Presented) A virtual wireless computer network as claimed in claim 18, wherein the velocities of each of the stations are taken into account and a warning given to the operator appropriate to the danger detected.

20. (Previously Presented) A virtual wireless computer network as claimed in claim 19, when provided to the operator of an oversize off-road haul truck and wherein both the velocity of the haul truck, and the position and velocity of any potential intruders in the vicinity of the haul truck are taken into consideration.

21. (Previously Presented) A method of communicating information comprising the steps of providing a virtual wireless network as claimed in claim 13, and using that network to transfer information between regions.

22. (Previously Presented) A method as claimed in claim 21 when used in a mining environment.

IX. EVIDENCE APPENDIX

An Evidence appendix is not included as no evidence and pursuant to §1.130, §1.131 or §1.132 or any other evidence entered by the Examiner and relied upon appellant in the appeal was ever submitted.

X. RELATED PROCEEDINGS APPENDIX

A related proceedings appendix is not included as no related decisions rendered by a court or the Board in any proceedings identified pursuant to 37 C.F.R. §41.37 (c)(1)(ii) exists.